

# Guide to Buying a Computer (Information for 2024)

---

This is a guide to the specifications you should look for to get a decent work/school desktop or laptop in 2024. The computers I am describing would be excellent for web browsing, video playback, office suite applications, Adobe CreativeSuite, basic video editing, accounting software, art and illustration programs, and other similar applications. If you need a computer to do serious rendering (for games, high-intensity video editing, 3D design, CAD, etc.) The recommendations here may not meet your needs.

I am not familiar with the specifications needed for gaming; if you are looking for someone who knows about graphics cards I'd suggest checking [GamersNexus \(https://gamersnexus.net/\)](https://gamersnexus.net/).

## Contents

---

### Overview

[Lifespan](#)

[Upgrades](#)

[Price](#)

[Operating System](#)

[Form Factor](#)

[Desktops](#)

[Laptops](#)

### Components You Need to Care About

[Processor](#)

[Intel](#)

[AMD](#)

[RAM](#)

[RAM Generation](#)

[RAM Size](#)

[Matching RAM](#)

[Drive](#)

[Drive Size](#)

[Drive Interface](#)

## Overview

---

### Lifespan

Computers have a limited lifespan. This is not a result of planned obsolescence, this is a result of the divergence between hardware capabilities and software requirements over time. While it is frustrating that your computer will slow down over time, this is actually a good thing. Imagine trying to use the modern internet on a dial-up connection. That would be unpleasant. That is why these things diverge. For more information on this, please see [Why does my computer slow down over time?](#).

In the business computer sales industry (my job), we estimate that the average desktop will have a functional lifespan of about seven years and the average laptop will last about five years. It is quite likely that you have computers that are older than this that are still alive and kicking, but my guess is that they're not as fast or easy to use as they used to be, and I know for certain that they aren't as stable as they were when you first got them. Over time, connections to the motherboard weaken, capacitors blow, and drives die. You cannot be certain that your fifteen-year-old desktop that turned on today will turn on tomorrow. Buying computers within their estimated functional lifespan can help to prevent catastrophic losses from drive failures and can save you money in the long run (because you won't have to scramble to get a computer if yours dies on you).

## **Upgrades**

Users should expect to upgrade their computers at least once. Typically this is at around the 3-5 year mark, and a standard upgrade would be adding more RAM and replacing the drive for a newer, possibly larger drive. The RAM will help your computer cope with the needs of newer programs and the drive will possibly increase storage and will definitely reduce the chance of data loss (most drives are rated for lifespans shorter than my estimation of the lifespan of a computer).

For this reason, it is best to purchase a computer that does not have the RAM or storage drive soldered to the motherboard. At a minimum, try to ensure that if you DO have soldered RAM, there is an expansion slot.

## **Price**

The lowest price that I can currently (March 2024) get a reasonably reliable desktop for is \$630. That is with manufacturer discounts and before tax. I expect to pay at least \$700 for a laptop. I am not saying that you'll never find a better deal than that, but I am saying that you are unlikely to get a decently functional laptop for \$400.

While refurbished computers may be tempting, I do not recommend buying refurbished unless the price is very, very low, or unless you are already comfortable repairing and replacing your hardware.

## **Operating System**

This guide is primarily written for Windows users, and is written with the needs of Windows 11 in mind. Any Linux distro you have in mind should run like a champ on the hardware described.

I do not recommend purchasing Apple computers, so this advice does not pertain to them. If you want advice about Apple computers my advice is to stop buying Apple computers. There are a million slim, sleek, lightweight laptops out there and almost every single one will be easier to

upgrade and will therefore have a longer lifespan than a modern macbook.

## Form Factor

### Desktops

- All-in-ones are not worth the money. If your monitor dies your whole computer is useless and the case is a giant pain in the ass to get into and tinker with. You are much better off buying a micro form factor PC (not a microPC, micro form factor) and mounting it on the back of your monitor. This will probably also be less expensive than the alternative. Don't buy an All-in-one.
- Tower desktops are relatively large and are what you will need if you want to add a graphics card. You should expect a tower desktop to be two feet in at least one dimension. They are larger than the average microwave.
- Small Form Factor desktops are most "normal" computers these days; they will likely be under eighteen inches in their longest dimension. They are about the size of a shoe box.
- Micro or Tiny Form Factor computers are very small, no more than 10 inches in their longest dimension. They do not have internal power supplies and use an external power supply like a laptop power cable. They can be mounted on the back of any VESA compliant monitor with an inexpensive kit. They are about the size of a large paperback book.

### Laptops

I do not recommend two-in-ones or touchscreens; screens break frequently and it is much easier and less expensive to replace a non-touch screen. If you need a touchscreen, I'd recommend getting a separate tablet rather than having a computer that is worse at being a tablet than a tablet would be and worse at being a computer than it should be.

# Components You Need to Care About

## Processor

---

Your processor is going to be essentially impossible to replace, so get the best one you can right out of the gate.

### Intel

- Stay within the last 4 generations; the current generation is 13 so you want gen 9 or later.
- Stay above i3. That means no core 2 duo, no random intel whatever, you are looking for a processor that starts with an i and ends with 5, 7, or 9.
- The format for the i-series is iX-YYYYY. X is the processor line (i5, i7, i9), and the first one or two digits of the YYYYY is the generation number, so i5-8400 is an 8th-gen i5 and i7-12560 is a 12th-gen i7.
- You want i5 and above and gen 11 and above at a bare minimum. If you can spring for an i7, that would be great, look for that. If you happen to find an i9 in your budget, grab it. Newer is

better, I'd say don't get anything below 12th gen unless you have no other options.

- Intel has now (late 2024) released their Ultra Series processors; this is basically the continuation of the i-series but now they're called, like "Intel Ultra 7 Processors" so the latest generations are now "iN-14XX" and "Ultra N."

## **AMD**

I don't know as much about AMD as I do about Intel so I can't get as granular, but anything in the Ryzen series 5 or up from the last four years should be fine. Try to get the newest one you can. Do not get an AMD processor that is not part of the Ryzen line and do not get a Ryzen 3.

## **RAM**

---

### **RAM Generation**

We are currently on the cusp of a generation change for computer RAM; you will find many computers that still have DDR4 RAM and many computers that now have DDR5 RAM. If possible, go with the DDR5.

### **RAM Size**

You need an absolute, bare minimum of 8GB of RAM these days, though 16GB is MUCH better and should be easy to find, look for 16GB first. If you can't get more than 8GB in an off-the-shelf computer, make sure the computer has expansion slots and you can add more. It will be cheaper for you to add more RAM on your own than it will be for you to add more RAM through a manufacturer configuration or to look for a model with more RAM.

### **Matching RAM**

If you do want to upgrade your RAM you need to make sure that it is the same generation, speed, and form factor as your computer's current RAM. So for instance if my computer came with an 8GB DDR5 5600MHz UDIMM and I wanted to add more, I would NOT want a 36GB DDR4 3200MHz SoDIMM. The generation starts with "DDR," the speed is displayed in megahertz, and the form factor ends with DIMM. If you look in the "about" for your computer or you check the specs online, it should tell you what size, generation, speed, and form factor are installed. You need to match generation (DDR), speed (MHz), and form factor (DIMM), but you do not need to match size.

If you are REMOVING the only RAM module and replacing it, make sure that you are matching the generation and form factor, and check online for the specs for your computer to see what the max size and speed are and don't exceed those when you make your purchase.

## **Drive**

---

You may still find computers that come with an HDD (hard disk drive) installed instead of an SSD

(solid state drive). Do not buy a computer with an HDD.

HDDs are spinning platters of metal that are read by a mechanical arm that moves very quickly while the metal spins. SSDs are chips of silicon that retrieve information electronically. SSDs are much, much faster than HDDs, though often come in smaller storage sizes.

## **Drive Size**

Many people now store most of their data on the cloud, so computer drive sizes are often very small. This is bullshit. You are, at a minimum, going to need 256GB of storage on your computer and that is too little and it is going to suck but unfortunately that's what a lot of computers come with these days.

You should aim to find a computer with 1TB of SSD storage. If a computer doesn't come with 1TB or if 1TB makes a computer prohibitively expensive, plan on purchasing the computer but replacing the installed SSD or adding a second SSD (depending on how your computer is built).

## **Drive Interface**

Check your computer manufacturer's specifications to see what the interface is of the installed drive and of any expansion slots. It is very common for computers to come with M.2 NVMe slots these days, but a surprising number still have SATA interfaces as well. Make sure that you are getting the correct SSD for your computer's interface when you upgrade or replace your drive.

---